

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for backside particle removal ~~during a semiconductor manufacturing process~~, comprising the operations of:

defining cleaning sites on a backside of a wafer, wherein the cleaning sites are regions of the backside of the wafer that physically contact a chuck during a semiconductor fabrication process; and

cleaning the cleaning sites on the backside of the wafer, ~~the cleaning being primarily directed to the cleaning sites.~~

2. (Currently Amended) A method as recited in claim 1, further comprising the operation of aligning the cleaning sites with contact regions of the chuck after the cleaning of the cleaning sites in preparation for the semiconductor fabrication process, wherein the contact regions are regions of the chuck that physically contact the backside of the wafer during the semiconductor fabrication process.

3. (Currently Amended) A method as recited in claim 2, wherein the chuck includes a chuck pin array, wherein the contact regions correspond to pin positions of a the chuck pin array.

4. (Currently Amended) A method as recited in claim 2, wherein the chuck is a vacuum chuck, and the contact regions correspond to wafer contact areas on a the vacuum chuck.

5. (Original) A method as recited in claim 1, further comprising the operation of pre-programming the contact regions into a cleaning controller.

6. (Original) A method as recited in claim 1, wherein a laser is utilized to clean the backside of the wafer.

7. (Original) A method as recited in claim 1, wherein a megasonic wand is utilized to clean the backside of the wafer.

8. (Currently Amended) A system for backside particle removal ~~during a semiconductor manufacturing process~~, comprising:

~~a chuck;~~

a cleaning controller that defines cleaning sites on a backside of a wafer, wherein the cleaning sites are regions of the backside of the wafer that physically contact a the chuck during a semiconductor fabrication process; and

~~a site-specific cleaning~~ an apparatus that is capable of cleaning configured to clean the cleaning sites on the backside of the wafer defined by the cleaning controller, the cleaning being primarily directed to the cleaning sites.

9. (Original) A system as recited in claim 8, further comprising a wafer aligning apparatus that aligns the cleaning sites with contact regions of the chuck, wherein the contact regions are regions of the chuck that physically contact the backside of the wafer during the semiconductor fabrication process.

10. (Original) A system as recited in claim 9, wherein the chuck includes a pin array that supports the wafer, and wherein the contact regions correspond to pin positions of the pin array.

11. (Original) A system as recited in claim 9, wherein the chuck includes grooves for applying a vacuum to the backside of the wafer, and wherein the contact regions correspond to areas of the chuck outside the grooves.

12. (Original) A system as recited in claim 8, wherein the ~~site-specific cleaning~~ apparatus is a laser.

13. (Original) A system as recited in claim 8, wherein ~~site specific cleaning the~~ apparatus is a megasonic wand.

14. (Currently amended) A system as recited in claim 8, wherein the ~~site specific cleaning~~ apparatus is integrated with a lithographic stepper apparatus.

15. (Currently Amended) A method for backside particle removal ~~during a semiconductor manufacturing process~~, comprising the operations of:

analyzing a backside of a wafer to obtain coordinates of specific particles located on ~~the~~ backside regions of the wafer that contact a chuck during a semiconductor manufacturing process; and

cleaning the obtained coordinates of the specific particles on the backside of the wafer, ~~the cleaning being primarily directed to the obtained coordinates of the specific particles.~~

16. (Original) A method as recited in claim 15, wherein the specific particles have a size greater than about 150 nm.

17. (Original) A method as recited in claim 15, wherein the obtained coordinates are provided to a cleaning controller that directs a site specific cleaning apparatus to clean the backside of the wafer at the obtained coordinates.

18. (Original) A method as recited in claim 17, wherein the site specific cleaning apparatus is a laser.

19. (Original) A method as recited in claim 17, wherein site specific cleaning apparatus is a megasonic wand.

20. (Canceled)

21. (New) A system for backside particle removal, comprising:

a cleaning controller that defines cleaning sites on a backside of a wafer, wherein the cleaning sites are regions of the backside of the wafer that physically contact a chuck during a semiconductor fabrication process; and

a megasonic wand to clean the cleaning sites on the backside of the wafer defined by the cleaning controller.

22. (New) A system for backside particle removal, comprising:

a cleaning controller that defines cleaning sites on a backside of a wafer, wherein the cleaning sites are regions of the backside of the wafer that physically contact a chuck during a semiconductor fabrication process; and

a laser to clean the cleaning sites on the backside of the wafer defined by the cleaning controller.